



PC SYSTEMS FAQ

Q What is a BIOS, and what does it do for the computer?

A The Basic Input Output System (BIOS) is an essential piece of software that's stored on a chip on your PC's motherboard. This software runs when you first turn on your PC and manages your hardware until your operating system takes over. Once you're in Windows, most of your hardware is accessed directly.

When you turn on your PC the BIOS performs certain tests to make sure critical hardware, such as your keyboard, drives and ports, is working properly. On most PCs you can enter the BIOS by holding down the Del, F1 or F2 keys during the boot process, although you won't have to do this often.

You can use the BIOS to alter certain basic hardware options. One of the most common reasons to enter the BIOS is to select a particular boot disk. Others include overclocking your processor and enabling or disabling certain features of your USB, FireWire and Ethernet ports. You should be very careful when changing options in the BIOS to avoid damaging your PC, but if you make a mistake you can choose to exit the BIOS without saving your changes.

You may have to update your BIOS to support new processors, for example, but it's not recommended unless absolutely necessary.

Q How important is upgradability when choosing a new PC?

A Most PCs are out of date within three years. By this time new power supplies, motherboards and processor sockets usually mean that upgrading a PC is pretty much a matter of rebuilding it from scratch.

The answer to the question depends on what you plan to use your computer for. If you are buying a PC for general office and internet use, it's unlikely that you will ever need to upgrade it, and you'll be better off buying a new computer when your current one gets too long in the tooth.

If you're into more demanding applications such as video editing or games, it's a different matter. Look at the number of free hard disk bays and SATA ports, so that you can add more storage later, and the number of free DIMM slots, so that you can upgrade the memory.

If you're into games, get a system with a spare PCI-E x16 slot so that you can add another graphics card in SLI mode to boost performance.

Upgrading is more of an art than a science, but when you buy a PC think about what you'll use it for. From there, consider the hardware it will use most (memory, storage, processor, graphics and so on) and make sure there's scope to upgrade those bits of the PC.

REVIEW MEDIA CENTER PC

SHUTTLE M1000

RATING ★★★★★

PRICE £1,304 inc VAT

SUPPLIER www.theglowlounge.com

DETAILS <http://eu.shuttle.com/en>



The stylish, retro-looking black M1000 may look like a piece of hi-fi equipment, but it's actually a Windows XP Media Center Edition 2005 PC. Although it's relatively compact, the M1000 will need some space around it as it gets quite warm. As you'd expect for a PC that's designed to hook up to your TV, it ships without a monitor, but it comes with a remote control and a wireless keyboard with built-in trackball.

The keyboard feels surprisingly responsive, although you wouldn't want to write a book on it. The keyboard also has Media Center's green button, so you can use it to access your media. While the remote's range is more than acceptable, it has to remain within the infrared sensor's narrow line of sight on the right-hand side of the PC to work. Viewing and recording TV shows with the Electronic Programme Guide (EPG) works well enough thanks to Microsoft's excellent interface.

While these features are common for all Media Center PCs, the M1000 has a couple of extras. First, a portable 2½" hard disk enclosure is provided. This plugs into the specially designed slot on the front of the PC, but it can connect to any USB port. However, it doesn't come with a hard disk installed,

so you'll have to buy and fit your own. The M1000 ships with two PCI analogue tuners, although you can swap these for two digital tuners instead.

It also uses a 1.73GHz Pentium M 740 mobile processor, which helps keep heat and noise to a minimum. It's not quite as powerful as a desktop processor, but it copes easily with its media-oriented tasks. Graphics performance from the nVidia GeForce 6600SE isn't great, but it's unlikely that you'd be playing games on this PC anyway.

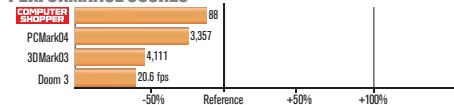
The M1000 plays High Definition (HD) video, but given the current lack of HD content, this isn't yet a huge advantage. It has an abundance of input and output ports (including 7.1 channel surround sound and component video), but no SCART socket. It also has WiFi connectivity, which is great for music, but video content would be smoother over its Gigabit Ethernet port.

The M1000 can write recorded video to DVD but you will need plenty of patience as the built-in writer records at a maximum of only 4X speed and can't record to two-layer DVDs.

The poor DVD writer detracts slightly from what is otherwise a stylish Media Center PC.

Alan Lu

PERFORMANCE SCORES



✓ Two TV tuners; good integration with existing media

✗ No SCART; slow DVD writer

SPECIFICATIONS 1.73GHz Intel Pentium M 740 processor, 512MB RAM, 250GB hard disk, DVD+/-RW, 256MB nVidia GeForce 6600SE graphics.
Part code M1000

HOTLIST DESKTOP PC

GLADIATOR Jupiter 6600GT

RATING ★★★★★

PRICE £799 inc VAT

SUPPLIER Gladiator 08456 444666

DETAILS www.gladiatorcomputers.com



Gladiator's Jupiter 6600GT is a powerful, well-built PC system that is easy to upgrade. It comes in a smart silver-fronted case. Its Logitech keyboard and mouse are particularly impressive: both are wired, but they are well made and comfortable to use.

Using an Athlon 64 3500+, 1GB of RAM and an nVidia GeForce 6600 GT graphics card, the Jupiter scored highly in our benchmark tests, with 121 in our application benchmarks and 41.8fps in Doom 3. The PC uses an SLI motherboard, so you can upgrade its graphics performance later by adding a second 6600 GT graphics card.

This is an excellent PC. Its processor, memory and graphics card are very good for the money,



and you can upgrade to SLI in the future. However, we have concerns about the return-to-base warranty. If you can't be without your PC, we recommend you look for one with onsite cover.

SPECIFICATIONS AMD Athlon 64 3500+ processor, 1GB RAM, 160GB hard disk, 128MB nVidia GeForce 6600GT graphics, DVD+/-RW DL, DVD-ROM, 17" LCD



REVIEW DESKTOP PC

EVESHAM Axis Blaze X850

RATING ★★★★★

PRICE £1,299 inc VAT

SUPPLIER Evesham 08701 609500

DETAILS www.evesham.com

The Axis Blaze X850 is one of the first Evesham systems to support ATI's CrossFire dual-graphics card technology. It comes with a single 256MB Radeon X850 Pro CrossFire Master graphics card, which delivers good 3D performance, as shown in our Doom 3 and 3DMark benchmark scores below.

You can gain a healthy boost in 3D performance by installing any PCI-E Radeon X800 series graphics card into the spare PCI-E x16 slot. This can be very handy if you happen to have an older graphics card lying around, and it isn't something nVidia's rival SLI technology can currently do as that requires two identical cards.

The dual-core Athlon 64 X2 4200+ processor made short work of our application benchmarks, which means the Blaze X850 is a good choice for demanding tasks such as video editing, although games don't currently take advantage of the extra core. With such blistering performance, though, the noise from the cooling fans can be quite noticeable, especially if you are recording and editing music.

Most manufacturers choose to skip on the peripherals when packing their PCs with powerful processors and graphic cards. While the Blaze X850 isn't overflowing with extras, Evesham has equipped

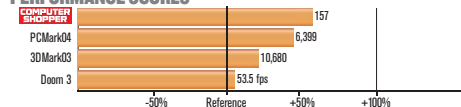
it with a choice selection. The impressive Creative X-Fi sound card not only supports the latest 7.1 surround-sound standards but also features EAX processing, which improves sound quality in games such as Doom 3. The accompanying i-Trigue 3200 speakers are attractive and produce good sound for their size, but better speakers are needed to get the most out of the X-Fi card.

The 19" ViewSonic monitor is difficult to adjust but reproduces colours well and provides fast refresh rates – especially important for smooth, blur-free gameplay. The bundled wireless Logitech mouse and keyboard are comfy, but demanding gamers will want a wired set. The three-year warranty, with onsite cover for two years, rounds off the package nicely.

Evesham's Axis Blaze X850 is an impressive system that offers great value. Although the most demanding gamers with a couple of hundred more pounds to spend will find systems that trade the dual-core processors for more powerful graphics cards, gamers on a budget, who also need a powerful PC for other tasks, will find the Blaze 850 an attractive choice.

Alan Lu

PERFORMANCE SCORES



Good performance; quality sound card; onsite warranty



Average speakers, keyboard and mouse; ugly case

SPECIFICATIONS AMD Athlon 64 X2 4200+, 1GB RAM, 250GB hard disk, 256MB GeCube ATI Radeon X850 Pro, Sony DW- Q28A DVD +/-RW +/-DL, Sony DDU1615 DVD-ROM, 19" LCD

HOTLIST DESKTOP PC

PC NEXTDAY Zoostorm 6607

RATING ★★★★★

PRICE £888 inc VAT

SUPPLIER sales@pcnextday.co.ukDETAILS www.pcnextday.co.uk

This PC is an all-round entertainer with something for everyone. The 6600GT graphics card is capable of playing all the latest games with smooth frame rates, while the hybrid TV card can receive, record and pause live analogue or digital TV. A large 250GB hard disk and DVD writer are included for archiving favourite shows, and DVD software is provided for watching movies. All this media comes to life with the large 19" LCD monitor and stereo speakers provided.

The Zoostorm 6607 is no slouch in the power stakes either. Its AMD Athlon 3500+ processor is paired with a generous 1GB of RAM. This made short work of our Shopper benchmarks, producing

an overall score of 106. For entertainment or work the Zoostorm is a great system for the money. Our only reservation is the limited one-year return-to-base warranty; an onsite warranty is preferable for most users.

SPECIFICATIONS AMD Athlon 64 3500+, 1GB RAM, 250GB hard disk, 128MB nVidia GeForce 6600GT graphics, DVD+/-RW +/-DL and DVD-ROM, 19" LCD

BYTE SIZE!



Our round-up of the best new gadgets and software

ANTEC ATX Power Supply Tester

RATING ★★★★★

PRICE £12 inc VAT

SUPPLIER www.dabs.comDETAILS www.antec.com

If your PC gives up the ghost and refuses to turn on, how can you tell if it's the motherboard or the power supply that's gone wrong without changing one of them? With Antec's ATX Power Supply Tester you can wave goodbye to that dilemma. It accepts 20- and 24-pin power connectors and powers up your PSU.

A row of LEDs light up to show which voltages are working. If any of them fail the test, a red LED shows that there's a fault. There's a connector for a voltmeter probe, so you can measure the actual voltages coming from your power supply. The one thing it won't tell you is how efficiently your power supply is delivering power. If you work with PCs a lot, this could be a valuable tool.

David Ludlow

PODGEAR House Party

RATING ★★

PRICE £50 inc VAT

SUPPLIER www.essentialipod.co.ukDETAILS www.podgear.net

PodGear's is the second worst House Party after Noel's. This set of portable speakers for your iPod also acts as a docking station with a USB port. It certainly looks the part and your iPod sits neatly in the middle of the speakers.

Unfortunately, turning it on ruins any illusions of quality. The sound is terrible and the speakers make all your music sound as if it's coming from a car radio with the aerial missing. There's no bass, it distorts at high volume and the range is pitiful. The small metal volume controls look like decoration, so it took us a while to find them. This may be cheap, but it needs better speakers if it's to do well.

David Ludlow





BYTE SIZE!



Our round-up of the best new gadgets and software

ASUS VR Guard

RATING ★★★★★

PRICE £25 inc VAT

SUPPLIER www.asus.com

DETAILS www.asus.com.tw



ASUS's VR Guard processor cooler is unusual in having its fan mounted on the side of the heatsink rather than on top. This directs airflow across the processor and the voltage regulators on the motherboard, cooling them down and prolonging your motherboard's life.

The VR Guard fits LGA775 motherboards. Rather than using Intel's annoying plastic clip design, the VR Guard screws to the motherboard. You will have to stick the backing plate to the underside of your motherboard, however, so fitting it will involve taking your entire computer apart.

Once fitted, the VR Guard feels sturdy. Testing it against Intel's reference cooler, we noticed that the VR Guard kept our 3.6GHz Pentium 560 processor running 10°C lower than the reference cooler.

Despite being tricky to fit, the VR Guard does a good job of keeping your PC cool.

David Ludlow

NOREVE MP3 Cases

RATING ★★★★★

PRICE £24 inc VAT

SUPPLIER www.pciho.com

DETAILS www.mp3-plus.net



MP3 players – particularly iPods – are prone to scratches and damage from being carried around all day. To remedy this, Noreve has produced a range of leather cases that'll keep your player protected.

We looked at the iPod and iRiver H140 cases. Both fit snugly around the MP3 player. The iPod case folds over the screen and protects the scroll wheel, while the iRiver case uses a plastic cover to protect the screen.

The cases look quite attractive and feel tough enough to protect your player against everyday wear and tear. All the cases are supplied with removable belt clips and come in a range of colours. They're good value considering how well made they are, but we have seen slightly more stylish offerings.

David Ludlow

REVIEW DESKTOP PC

ACER Aspire E300-NB73

RATING ★★★★★

PRICE £899 inc VAT

SUPPLIER Acer 08708 531005

DETAILS www.acer.co.uk



The E300-NB73 desktop PC from Acer, a company perhaps better known for its notebooks, is available with or without Media Center capabilities. This reasonably attractive non-Media Center version is billed as a 64-bit Gamer. Unfortunately, the E300 performed poorly in our Doom 3 and 3DMark benchmark tests, scoring well below what we would expect of a PC at this price, thanks to its rather average nVidia GeForce 6600 graphics card. In our other benchmark tests, the E300 performed as expected, although it is by no means exceptional.

The E300 is equipped with a 939 processor socket, so future processor upgrades should be straightforward. Unfortunately, the E300 lacks any free PCI slots. Strangely, while the E300 features four free 3½" drive bays, the single free SATA port means only one drive would be able to take advantage of SATA.

Although the E300 is capable of outputting 5.1 surround sound, Acer provides a rather limp pair of own-brand 2.1 speakers. The spongy keyboard deserves a special mention for its huge swathe of unused space, which is a waste considering the hard-to-hit, half-height function keys and tiny

media keys. The comfy optical mouse, on the other hand, does look quite stylish.

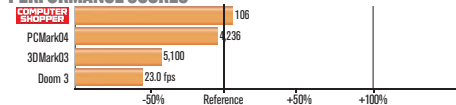
Acer deserves credit for including a bright 19" LCD monitor with a fast response time, good contrast and rich colours – no doubt due in part to the display's gloss finish. Unfortunately, this means the monitor also reflects a lot of light, and the resulting glare can be quite distracting. The monitor looks slightly darker near the top and bottom of the flat panel, but this is quite subtle.

The E300 is also available without a monitor for about £200 less. Upgraders looking to replace their existing system while keeping their existing monitor may find this an attractive option.

While the E300 could prove competent as an image- and video-editing PC, its competitors are not only faster at such tasks but also feature better expansion options and peripherals. While bundling a quality monitor, Acer perhaps forgot to pay more attention to the other ingredients that make a good-value PC.

Alan Lu

PERFORMANCE SCORES



✓ High-quality LCD monitor

✗ Poor 3D performance; unbalanced expansion options

SPECIFICATIONS Athlon 64 3500+, 1GB RAM, 200GB hard disk, DVD+/-RW DL, 256MB nVidia GeForce 6600, 19" LCD. **Part code** E300-NB73

HOTLIST DESKTOP PC

PC NEXTDAY Zoostorm 5-7401 Gaming PC

RATING ★★★★★

PRICE £1,499 inc VAT

SUPPLIER sales@pcnextday.co.uk

DETAILS www.pcnextday.co.uk



PC Nextday's case isn't really to our taste; its red eyes and plastic horns were the subject of derision in *Shopper* Labs. Fortunately this PC is redeemed by its performance.

The 5-7401 uses two nVidia GeForce 7800GT graphics cards in SLI mode. You also get two Maxtor 200GB hard disks in a RAID 0 array. This helps games load faster, but if one disk fails you'll lose all your data.

The 19" AOC monitor performed well in most of our image tests, although backlighting was slightly uneven. The Sound Blaster Audigy ZS card and set of Creative 7.1 surround-sound speakers make 3D games sound more realistic,

but the wireless mouse and keyboard are less impressive inclusions.

The Athlon 64 4000+ processor scored 126 overall in our *Shopper* benchmarks, and in 3D tests the 5-7401 left the competition in its wake. This PC will run any game in glorious detail.

SPECIFICATIONS AMD Athlon 64 4000+ processor, 1GB RAM, 2x 200GB hard disks, 2x 256MB nVidia GeForce 7800 GT graphics, DVD+/-RW DL, DVD-ROM, 19" LCD



CHOOSING A...

PC SYSTEM

Follow our simple step-by-step guide to buying a PC and get the perfect system for your needs

FILL IN YOUR SPECS HERE

(Recommended minimum in grey)

PROCESSOR: Athlon 64 3000+

MEMORY: 256MB DDR

HARD DISK: 120GB

STORAGE: 52X CD-RW/16X DVD
combo drive

SOUND: Integrated

SPEAKERS: Stereo

GRAPHICS: Integrated

MONITOR: 17" LCD

EXTRAS: 56K modem

CONNECTORS: 4x USB2.0, network

SOFTWARE: Windows XP Home Edition

BASICS: Keyboard, mouse

1

The minimum specification of PC we recommend, shown in grey opposite, is a good starting point when working out your ideal system. This PC would cost around £500 and is perfectly capable of running everyday office, multimedia or education software, as well as doing anything on the internet. But it's an unexciting PC. It will be able to play DVD movies, but they won't sound too impressive and games are a total no-no.

2

If you're interested in editing your own movies, you'll need a DVD rewriter. Make sure that you get one that supports both +R and -R formats. It's also worth getting one that will write double-layer discs, as this lets you squeeze twice as much information on a DVD.

There's not much difference in price between the different drive speeds, so we recommend getting one that can write DVD+R and DVD-R at 16X, and DVD+R DL at 4X. If you'll be doing a lot of video projects and disc writing, upgrade to a 200GB hard disk as a minimum.

3

Interested in games? Then upgrade to 512MB or 1GB of memory and a 200GB disk and get a graphics card. Budget cards based on the GeForce FX 5200 graphics processor or Radeon 9800 will cope with this year's games, but to play next year's just as smoothly (and enjoy gorgeous graphics today) you'll want anything up to a GeForce FX 7800GTX or Radeon X850XT. You'll also need a faster processor.

4

Which faster processor? Well, faster AMD processors such as the Athlon 64 3400+ are good value. An Athlon FX-based system will cost £300 more but offers much better performance. The alternative is a PC based on Intel's Pentium 4 processor. These are also pricier, but many people feel reassured by the Intel brand, and the fastest P4s always do well in our performance tests.

5

If you're really not interested in games you can definitely live with integrated or cheap graphics, but there are plenty more reasons to upgrade the memory, hard disk or processor.

If you'll use your PC for serious DTP, music or photo editing you need the same kind of processor, memory and disk as for games. For video editing, consider getting two hard disks, perhaps in a RAID array.

6

A quality sound system will enhance all manner of PC activities. To hear the surround soundtrack of a DVD at its best, you'll need a quality 5.1 speaker system. Games can also use such a system to throw sound effects around you. If you're interested in neither games nor DVDs (or don't want to trail wires all around the room), go for a quality stereo pair with a subwoofer to boost the bass instead.

If you're interested in music or want better-quality sound, you'll need to invest in a dedicated sound card. As well as providing enhanced sound, such as Environmental Audio eXtension (EAX), which tweaks the acoustics to make sound appear to be playing in different environments, you'll get higher-quality outputs and more inputs.

7

Although 17" LCD screens save on desk space and look stylish, the limited display size means some may find onscreen text hard to read. A 19" LCD will cost around £50 more, has the same resolution (1,280x1,024) and is easier on the eye. It's better for those who want to edit large photos, documents or spreadsheets, run two applications side by side, or just look important. Twenty-inch LCDs are available from £400 and have a higher resolution (1,600x1,200).

8

The standard set of connectors can be usefully improved with extra USB2 ports, to which most run-of-the-mill PC gadgets attach, and a FireWire port, for fancy gadgets including digital video (DV) cameras.

9

Windows XP Home Edition is preinstalled on most new PCs. Any extra software bundled should be assessed critically. It may be that you'll never actually use it. But equally, you may happen across a PC that includes software you'd otherwise have paid for, in which case you'll almost certainly save lots of money by having it preloaded, although you won't get technical support included.

10

Money left over? A TV card will let you watch television on your PC screen plus record programmes to your hard disk, or capture analogue video from a camcorder. Rather than splashing out on an extended warranty, pay extra to get the make of PC your friends or colleagues swear by.

